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## **APPEAL BRIEF**

### **(I.) REAL PARTY IN INTEREST**

The real party in interest is OTV SA S.A.

### **(II.) RELATED APPEALS AND INTERFERENCES**

There are no related appeals or interferences.

### **(III.) STATUS OF CLAIMS**

Claims 25-53 are pending.

Claims 1-24 are canceled.

Claims 25-53 are rejected and appealed herein.

### **(IV.) STATUS OF AMENDMENTS**

All amendments have been entered.

### **(V.) SUMMARY OF CLAIMED SUBJECT MATTER**

Claim 25 is directed to a fine filtering apparatus **100** for removing particles from water. The device comprises an elongated housing forming a main body **1** and having an impervious wall enclosing an interior cavity that extends through the housing. *See*, spec. p. 5, lines 1-2 and Figs. 1, 2. A plurality of flexible fibers **6** extend within the cavity for contacting flowing water and removing fine particles from the water without separating a permeate from the water. *See*, spec. p. 5, lines 3-4 and Fig. 2. The housing includes a pair of opposed end portions wherein disposed adjacent a first end portion is a water inlet **2** for receiving a stream of water, the inlet including an annular water guide jacket **7** extending around the first end portion of the housing and being in fluid communication with the cavity for distributing the water within the cavity. *See*, spec. p. 5, lines 5-6 and Fig. 2. A header jacket **16** is disposed adjacent an opposite second end portion of the housing. *See*, spec. p. 5, lines 17-18 and Fig. 2. The header jacket **16** includes a clarified water outlet **3** for discharging clarified water from the cavity. *See*, spec. 9, lines 16-19 and Fig. 2. The header jacket **16** also includes a waste outlet **5** for discharging

concentrated waste from the cavity. *See*, spec. p. 8, lines 2-4 and Fig. 2. Further, the device includes an air inlet 4 for directing air into the cavity such that the air may contact the fibers 6 and clean some of the fine particles from the fibers 6. *See*, spec. p. 9, lines 7-10 and Fig. 2. A density control plate 9 having an annular shape is disposed within the housing below the water guide jacket 7 for increasing a density of the fibers 6 below the water guide jacket 7 and for generally inhibiting the water from flowing downwardly in a direction toward the air inlet 4. *See*, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Fig. 2. In one mode of operation, the water is directed through the cavity and some of the fine particles are removed from the water producing the clarified water that is discharged from the cavity via the clarified water outlet 3. *See*, spec. p. 10, lines 1- 15 and Figs. 12 and 13. In another mode of operation, both the air and the water are directed through the cavity and some of the fine particles are cleaned from the fibers 6 producing the concentrated waste that is discharged from the cavity through the waste outlet 5. *See*, spec. p. 10, lines 15- 33 and Figs. 12 and 13.

Claim 28 depends from claim 26 and requires that the density control plate 9 increases the density of fibers 6 in an area of the cavity between the water guide jacket 7 and the media fixing plate 12. *See*, spec. p. 5, lines 9-12 and Fig. 2. The increased density of the fibers 6 generally inhibits the water from flowing in a direction from the water guide jacket 7 towards the media fixing plate 12. *See*, spec. p. 8, lines 10-11 and Fig. 9. The density control plate 9 comprises an annular shaped plate disposed within the housing between the media fixing plate 12 and the annular water guide jacket 7 and has an opening through which the fibers 6 extend. *See*, spec. p. 5, lines 9-12 and Figs. 2, 9, and 10. The annular plate 9 constrains the fibers 6 to the opening thereof, thereby increasing the density of the fibers 6 in the opening of the annular plate 9 and generally inhibiting the water from flowing from the water guide jacket 7 to the media fixing plate 12. *See*, spec. p. 5, lines 9-12 and Fig. 2.

Claim 29 depends from claim 25 and requires one or more air supply holes **14** disposed in a member within the housing for conducting air into the cavity and dispersing air within the cavity and about the fibers **6**. See, spec. p. 9, lines 5-8 and Fig. 2

Claim 30 depends from claim 29 and requires that the one or more air supply holes **14** form an array of air supply holes **14** disposed in a media fixing plate **12**. See, spec. p. 9, lines 5-8 and Figs. 7 and 8. The array of air supply holes **14** are disposed adjacent ends of the fibers **6** that are secured in the plate **12** and which act to disperse the air about the fibers **6**. See, spec. p. 9, lines 5-8 and Figs. 2, 7, and 8.

Claim 31 depends from claim 25 and requires an array of openings **8** disposed in a circumferential band around the outer wall of the housing. See, spec. p. 8, lines 21-27 and Figs. 2 and 9. The array of openings **8** in the outer wall is aligned with the annular water guide jacket **7** to conduct the water into the cavity and to distribute the water within the cavity. See, spec. p. 8, lines 21-27 and Figs. 2 and 9.

Claim 34 is directed toward a fine filtering apparatus **100** for removing fine particles from water directed from a water source. The device comprises an elongated housing forming a main body **1** and having an impervious outer wall comprising a substantial portion of the main body **1**. See, spec. p. 5, lines 1-2 and Figs. 1, 2. An interior cavity extends through the housing and is substantially enclosed within the outer wall. See, spec. p. 5, lines 1-5 and Fig. 2. A plurality of flexible fibers **6** extends within the cavity for contacting flowing water and removing fine particles from the water. See, spec. p. 5, lines 3-4 and Fig. 2. First and second end portions of the housing are each disposed adjacent opposite first and second ends of the housing. See, spec. p. 5, lines 5-6 and Fig. 2. A water inlet **2** is disposed on the first end portion for directing the water into the cavity. See, spec. p. 5, lines 5-6 and Fig. 2. The second end portion of the housing includes a clarified water outlet **3** for discharging clarified water from the cavity and a waste outlet **5** for discharging a concentrated waste from the cavity. See, spec.

9, lines 16-19 and Fig. 2. An air inlet 4 is disposed adjacent the first end portion for directing air into the cavity for contacting the fibers 6 and for cleaning some of the fine particles from the fibers. See, spec. p. 9, lines 7-10 and Fig. 2. Further, the device includes a density control plate 9 for increasing the density of the fibers 6 in an area of the cavity between the water inlet 2 and the air inlet 4. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Fig. 2. The increased density of the fibers 6 generally inhibits the water from flowing in a direction from the water inlet 2 towards the air inlet 4. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Figs. 2, 9 and 10. The density control plate 9 comprises an annular plate disposed within the housing between the water inlet 2 and the air inlet 4 and has an opening through which the fibers 6 extend. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Figs. 2, 9 and 10. The annular plate 9 constrains the fibers 6 to the opening thereof, thereby increasing the density of the fibers 6 in the opening of the annular plate 6 and generally inhibiting the flow of water from the water inlet 2, through the opening of the annular plate 9, to the air inlet 4. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Figs. 2, 9 and 10. In one mode of operation, the water is directed through the cavity and some of the fine particles are removed from the water, producing the clarified water that is discharged via the clarified water outlet 3. See, spec. p. 10, lines 1- 15 and Figs. 12 and 13. In another mode of operation, both the air and the water are directed through the cavity and some of the fine particles are cleaned from the fibers producing the concentrated waste that is discharged via the waste outlet 5. See, spec. p. 10, lines 15- 33 and Figs. 12 and 13.

Claim 37 depends from claim 34 and requires one or more air supply holes 14 in a member disposed within the housing for conducting the air into the cavity and dispersing the air about the fibers 6. See, spec. p. 9, lines 5-8 and Fig. 2

Claim 41 is directed to a method of treating water having fine particles therein with a device having a treatment cavity, an air inlet 4 and a water inlet 2 disposed on one portion of the device, and a clarified water outlet 3 and a concentrated waste outlet 5 disposed on another

portion of the device. See, spec. p. 5, lines 5-6, p.9, lines 2-4, p. 9, lines 7-10, 16-19, and Fig.

2. The method includes closing the concentrated waste outlet **5** and opening the clarified water outlet **3**. See, spec. p. 9 line 29 through p. 10, line 4, and Fig.12. Further, the method includes directing the water into the water inlet **2** and through the treatment cavity. See, spec. p. 9 line 29 through p. 10, line 4, and Fig.12. As the water is passed through the treatment cavity, water flows adjacent a plurality of flexible fibers **6** extending within the treatment cavity and fine particles from the water are removed without separating a permeate from the water. See, spec. p. 10, lines 4-15, and Fig.12. The clarified water is discharged out the clarified water outlet **3**. See, spec. p. 9 line 29 through p. 10, line 4, and Fig.12. In addition, the method includes closing the clarified water outlet **3** and opening the concentrated waste outlet **5**. See, spec. p. 10 lines 16-20, and Fig.13. Air is injected into the treatment cavity and mixed with the water having the fine particles to form an air-water mixture. See, spec. p. 10 lines 21-33, and Fig.13. The air-water mixture is passed through the treatment cavity to contact the fibers **6** and dislodge the fine particles captured on the fibers **6**. See, spec. p. 10 lines 21-33, and Fig.13. This produces a concentrated waste including the air-water mixture and the dislodged fine particles. See, spec. p. 10 lines 21-33, and Fig.13. The concentrated waste is discharged through the concentrated waste outlet **5**. See, spec. p. 10 lines 21-33, and Fig.13.

Claim 43 depends from claim 41 and requires extending an annular device **9** around a portion of the fibers **6** and generally compressing the fibers **6** in an area of the treatment cavity. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Figs. 2 and 10.

Claim 45 depends from claim 41 and requires directing the air into the treatment cavity via an array of air supply holes **14** disposed in a media fixing plate **12**. See, spec. p. 9, lines 5-8 and Fig. 2. The array of air supply holes **14** are adjacent fiber ends **6** that are secured to the media fixing plate **12**. See, spec. p. 9, lines 5-8 and Fig. 2.

Claim 46 depends from claim 41 and requires directing the water into the treatment cavity includes directing the water through an array of openings **8** in a circumferential band extending around an outer wall that surrounds the treatment cavity and distributing the water within the cavity. See, spec. p. 8, lines 21-27 and Figs. 2 and 9.

Claim 52 depends from claim 41 and requires extending the flexible fibers **6** through a generally central opening formed in an annular plate **9** that is disposed between the water inlet **2** and the air let **4** such that the flexible fibers **6** are constrained by the opening in the annular plate **9** and the density of the flexible fibers **6** in the opening of the annular plate **6** generally inhibits the flow of water from the water inlet **2** to the air inlet **4**. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Figs. 2 and 10.

**(VI.) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether claim 25 is anticipated under § 102 by PCT Patent No. WO 02/24306 (Boye).

Whether claim 28 is anticipated under Boye.

Whether claim 30 is anticipated under Boye.

Whether claim 34 is anticipated under Boye.

Whether claim 41 is anticipated under Boye.

Whether claim 45 is anticipated under Boye.

Whether claim 52 is anticipated under Boye.

Whether the specification fails to provide proper antecedent basis for claim terms found in claims 29, 31, 37, 43, 46, and 52.

**(VII.) ARGUMENT**

**A. Claim 25 is Not Anticipated by Boye because Boye does not disclose each and every limitation of claim 25**

Anticipation under § 102 requires the disclosure of each and every limitation of a claimed invention in a single piece of prior art. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) and MPEP § 2131. Further, the "identical invention must be shown in as complete detail as is contained in the...claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989) and MPEP § 2131.

**1. The Examiner's finding that the alleged density control plate in Boye has an annular shape is unsupported**

Claim 25 requires, in part:

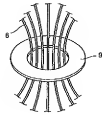
- h. a density control plate having an annular shape and disposed within the housing below the water guide jacket for increasing a density of the fibers below the water guide jacket and for generally inhibiting the water from flowing downwardly in a direction toward the air inlet

In rejecting claim 25, the Examiner finds that either of Boye's compressing means 7a/7b or inner collars 11/12 is the claimed density control plate. These findings are not supported by any evidence, much less substantial evidence. Neither Boye's compressing means 7a/7b nor inner collars 11/12 meet the limitations for the claimed density control plate.

One of ordinary skill in the art understands that the meaning of the claim terms "annular shape" refers to a device that is formed in a ring shape. The ordinary meaning of "annular" is a device shaped like or forming a ring. The Examiner has not disputed this construction. Moreover, this construction is consistent with the specification. The density control plate's "annular shape" is clearly shown Applicant's Fig. 10 shown below.



**FIG. 10**



However, Boye describes the compressing means 7a/7b as a clamp having two jaws. See, Boye, p. 12, lines 4-12. As shown in Fig. 1 of Boye, clamp 7a/7b clearly does not have an annular shape, as required by the claim. The claim term "annular shape" cannot reasonably be construed so broadly as to include clamp 7a/7b.

Further, although Boye's inner collars 11/12 may have an annular shape, these elements are not density control plates. Instead, inner collars 11/12 form a stop for the o-rings 13/14 respectively, and thus, inner collars 11/12 keep the o-rings 13/14 in place. See, Boye, p. 12, line 34 through p. 13, line 4. Nothing in Boye describes that inner collars 11/12 vary the density of the fibers, as required by the claimed density control plate. Accordingly, no element in Boye describes a density control plate that has an annular shape. For the reasons discussed above, the Examiner's findings are unsupported.

**2. The Examiner's finding that the alleged density control plate in Boye is disposed below the alleged water guide jacket is unsupported**

As shown above, claim 25 requires that the density control plate be disposed below the water guide jacket. This inhibits water, flowing into the housing through the water guide jacket, from flowing downwardly. See, spec. p. 8, lines 10-11, p. 5, lines 9-12, and Fig. 2. As stated above, in rejecting claim 25, the Examiner finds that either of Boye's compressing means 7a/7b or inner collars 11/12 is the claimed density control plate. Further, the Examiner finds that the area surrounding inlet 6 is the claimed water guide jacket. These findings are not supported by any evidence, much less substantial evidence.

In an effort to interpret Boye as disclosing the above limitation, the Examiner mischaracterizes the teachings of Boye. The Examiner states that Boye discloses that the alleged density control plates and the alleged water guide jacket may be disposed in a variety of places. Based on this finding, the Examiner makes a finding that Boye's alleged density control plate "can be below water guide jacket." This finding is erroneous. Although Boye describes that "different arrangements of said location of compressing may be used" nothing in Boye specifically *teaches* that the alleged density control plate is disposed below the alleged water guide jacket, as required by the claim. Instead, in every embodiment described in Boye, the alleged density control plate is always disposed above the alleged water guide jacket.<sup>1</sup> Thus, nothing in Boye teaches the above claim limitation. It is improper for the Examiner to base a § 102 rejection on mere possibilities of where particular elements in Boye "can be" placed. Instead, a proper § 102 rejection, must disclose each and every element of a claim. Boye simply does not disclose a density control plate disposed below a water guide jacket. Thus, the rejection of claim 25 is factually unsupported.

**3. Boye expressly teaches placing the alleged density control plate above the water guide jacket**

Not only does Boye disclose that the alleged density control plate is disposed above the alleged water guide jacket, but Boye goes to length describing why the alleged density control plate should be disposed above the alleged water guide jacket. For instance, Boye states that "[i]n order to obtain sufficient space for the deposited particles and in order to avoid early clogging of the- filtering device, the jaws 7a/b, and thereby the location of the compressing 8 is preferably arranged so that about 2/3 of the length of the fibre housing is on the inlet side of the jaws 7a/b..." Boye, p. 12, lines 14-17. Thus, placing the alleged density control plate below the

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<sup>1</sup> As used herein, the term "above" is used as a term of reference. Boye describes a device that filters water as it enters from the left side of the device and flows to the right side of the device. Accordingly, the Boye device is arranged on a horizontal axis. However, Applicants assume that the Examiner is interpreting Boye such that if the

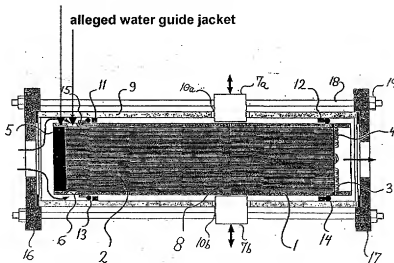
alleged water guide jacket, would position the alleged density control plate such that the deposited particles would clog the filtering device.

4. It is practically impossible to position the alleged density control plate below the alleged water guide jacket and compress the fibers, as required by claim 25.

As stated above, only Boye's clamp 7a/7b can reasonably be construed to control the density of the fibers, as required by the claimed density control plate. When the jaws of clamp 7a/7b are contracted, the jaws vary the density of the fibers. Boye's jaws 7a/7b are the only structure in Boye that varies the density of the fibers.

If the alleged density control plate - clamp 7a/7b - is placed "below" the alleged water guide jacket, then the clamp 7a/7b has to be placed to the area left of the alleged water guide jacket -- the area surrounding inlets 6. However, the area immediately adjacent and to the left of the area surrounding inlets 6 is a support structure that anchors the fibers thereto. It is practically impossible to put clamp 7a/7b around this support structure. Moreover, the Examiner provides no evidence that this support structure could be compressed by clamp 7a/7b.

support structure for anchoring the fibers



Boye device were rotated 90°, the device would be arranged on a vertical axis. Under this interpretation, the alleged density control plate is disposed above the alleged water guide jacket.

**5. The Examiner's finding that the alleged header jacket in Boye includes both a clarified water outlet and a waste outlet is unsupported**

Claim 25, in part, is as follows:

A fine filtering apparatus for removing fine particles from water, the device comprising....the header jacket including a clarified water outlet for discharging a clarified water from the cavity; the header jacket also including a waste outlet for discharging a concentrated waste from the cavity...

In the § 102 rejection of claim 25, it is unclear what element in Boye the Examiner maintains is the header jacket. The Examiner merely states that the header guide jacket is shown "by the arrow exiting the device" in Boye's Fig. 1. Accordingly, based on the rejection, it is impossible for Applicants to ascertain what exact element or elements comprise the alleged header jacket.

Notwithstanding the above, Boye does not disclose any structure that meets the claim limitations of the claimed header jacket. For instance, Boye does not disclose any structure that includes two outlets -- a clarified water outlet and a waste outlet -- as required by the claim. Instead, Boye describes that the outlet (shown by the arrow exiting the device in Boye's Fig. 1) is used as both the clarified water outlet and the waste outlet. This is clearly shown in both Boye's Figs. 1 and 2. However, a proper construction of this claim requires that the header jacket include two separate outlets. No reasonable construction of the claim encompasses a single outlet as shown by the arrow exiting Boye's device.

Boye discloses plumbing and valves disposed downstream from the alleged header jacket that allow the clarified water and the waste to be directed from the filtering device. This plumbing is external to the alleged header jacket. However, since the claim requires that the header jacket include the clarified water outlet and the waste outlet, Boye's plumbing disposed downstream from the alleged header jacket cannot be deemed the claimed clarified water outlet and the waste outlet. For this additional reason, claim 25 defines patentable subject matter over the cited art.

**B. Claim 28 is Not Anticipated by Boye because Boye does Not Disclose Each and Every Limitation of Claim 28**

Claim 28, in part, is as follows:

The fine filtering apparatus of claim 26...the density control plate comprising an annular shaped plate is disposed within the housing between the media fixing plate and the annular water guide jacket...

**1. The Examiner's finding that the alleged density control plate in Boye is an annular plate is unsupported**

As stated above, only Boye's clamp 7a/7b can reasonably be construed to control the density of the fibers, as required by the claimed density control plate. When the jaws of clamp 7a/7b are contracted, the jaws vary the density of the fibers. Boye's jaws 7a/7b are the only structure in Boye that varies the density of the fibers.

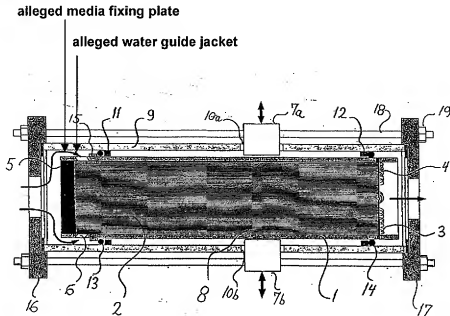
One of ordinary skill in the art understands that the meaning of the claim terms "annular shaped plate" refers to a plate that is formed in a ring shape. The density control plate's "annular shaped plate" is clearly shown Applicant's Fig. 10 shown above. However, Boye describes the compressing means 7a/7b as a clamp having two jaws. See, Boye, p. 12, lines 4-12. As shown in Fig. 1 of Boye, clamp 7a/7b clearly is not an annular shaped plate, as required by the claim. The claim term "annular shaped plate" cannot reasonably be construed so broadly as to include clamp 7a/7b.

**2. The Examiner's finding that the alleged density control plate in Boye is positioned between the alleged media fixing plate and the alleged water guide jacket is unsupported.**

In rejecting claim 28 the Examiner alleges that Boye discloses that the "fibers are attached to a media fixing plate near the inlet..." However, the Examiner never points out where Boye teaches that the alleged density control plate is disposed between the alleged media fixing plate and the alleged water guide jacket. Instead, the Examiner merely states that the alleged media fixing plate is located "near the inlet" and the alleged water guide jacket "surrounds the inlet 6." Action, p. 3, 5. To properly reject a claim under § 102 the Examiner

must point where the prior art teaches each limitation of a claim. Since the Examiner has failed to set forth a proper § 102 rejection, the rejection fails as a matter of law.

As described above and as shown in Fig. 1 of Boye reproduced below, the alleged water guide jacket --the area surrounding inlets 6 -- is disposed immediately adjacent the alleged media fixing plate.



As explained above, the only structure in Boye that can reasonably be construed to control the density of the fibers, as required by the claimed density control plate, is Boye's clamp 7a/7b. When the jaws of clamp 7a/7b are contracted, the jaws vary the density of the fibers.

As shown in Fig. 1 of Boye, the alleged density control plate -- clamp 7a/7b -- is clearly not disposed between the alleged media fixing plate and the alleged water guide jacket. Instead, clamp 7a/7b is positioned to the far right of the alleged media fixing plate and the alleged water guide. Moreover, in every embodiment described in Boye, the alleged density control plate is always disposed to the far right, and therefore "above," the alleged media fixing

plate and the alleged water guide jacket.<sup>2</sup> For at least this reason, claim 28 defines patentable subject matter over the cited art.

**C. Claim 30 is Not Anticipated by Boye because Boye does Not provide Air Supply Holes Formed in an Array Disposed in a Media Fixing Plate**

Claim 30 is as follows:

The fine filtering apparatus of claim 29 wherein the one or more air supply holes form an array of air supply holes disposed in a media fixing plate, the array of air supply holes being disposed adjacent ends of the fibers that are secured in the plate and which act to disperse the air about the fibers.

In rejecting this claim the Examiner never shows where Boye discloses an array of air supply holes disposed in the alleged media fixing plate. Instead, the Examiner merely states that "inlet 66 may be used for injecting or conducting a liquid, air or gas into the system to be used for a flushing process." Action, p. 6. To properly reject a claim under § 102 the Examiner must point to where the prior art teaches each limitation of a claim. Since the Examiner has failed to set forth a proper § 102 rejection, the rejection fails as a matter of law.

Moreover, as shown in Fig. 2 of Boye, the air is never conducted through air supply holes disposed in the media fixing plate. Further, Boye never mentions any type of air supply holes disposed in the media fixing plate. Instead, Boye only teaches that air is injected into the housing from inlet 66 through line 56. Air enters the filtration device from line 56 into the inlet end 5 of the filtration device. When air passes into inlet end 5, the air travels through inlets 6 and through the fibers. These inlets 6 are not disposed in the alleged media fixing plate, but instead are disposed to the right of the alleged media fixing plate. Thus, air actually bypasses the alleged media fixing plate. For at least this reason, claim 30 defines patentable subject matter over the cited art.

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<sup>2</sup> See Footnote 1.

**D. Claim 34 is Not Anticipated by Boye because Boye does Not disclose Each and Every Limitation of Claim 34**

Claim 34 requires, in part:

- h. ... the density control plate comprising an annular plate disposed within the housing between the water inlet and the air inlet and having an opening through which the fibers extend, wherein the annular plate constrains the fibers to the opening thereof, thereby increasing the density of the fibers in the opening of the annular plate...

**1. Boye does not disclose a density control plate that is an annular plate**

As stated above, the only structure in Boye that can reasonably be construed to control the density of the fibers, as required by the claimed density control plate, is Boye's clamp 7a/7b. When the jaws of clamp 7a/7b are contracted, the jaws vary the density of the fibers.

One of ordinary skill in the art understands that the meaning of the claim terms "annular plate" refers to a plate that is formed in a ring shape. This is clearly shown in Applicant's Fig. 10 above. However, Boye describes that clamp 7a/7b has two jaws. See, Boye, p. 12, lines 4-12. Clearly, clamp 7a/7b is not an annular plate, as required by the claim. The claim term "annular plate" cannot reasonably be construed so broadly as to include clamp 7a/7b. For at least this reason, claim 34 defines patentable subject matter over the cited art.

**2. The Examiner's argument that claim 34 has the same scope as claim 25 is unsupported.**

In rejecting claim 34, the Examiner argues that "claim 34 is analogous to independent claim 25 but (1) substitutes claim 25's 'annular water guide jacket' for 'first end portion of the housing,' (2) substitutes claim 25's 'header jacket' for 'second end portion of the housing'." Action, p. 8. This finding is unsupported. However, based on this finding, the Examiner states that "the patentability analyses [of claims 25 and 34] are similar and will not be repeated here." As shown above, claim 25 includes both "a pair of opposed end portions" and an "annular water guide jacket" and a "header jacket." These elements are recited as distinct and separate elements of the filtering apparatus. Claim 34 also recites "first and second end portions" but,



never positively cites the "annular water guide jacket" and a "header jacket." Thus, the latter two elements are not required in claim 34. Claim 34 does not substitute any element in claim 25. Instead, claim 34 merely has a different scope from claim 25. Accordingly, since the Examiner has not shown where Boye teaches each limitation of claim 34, the § 102 rejection of claim 34, fails as a matter of law.

**E. Claim 41 is Not Anticipated by Boye because Boye does Not disclose a Device that Includes Both a Clarified Water Outlet and a Concentrated Waste Outlet.**

Claim 41, in part, is as follows:

A method of treating water having fine particles therein with a device having a treatment cavity, an air inlet and a water inlet disposed on one portion of the device, and a clarified water outlet and a concentrated waste outlet disposed on another portion of the device...

Claim 41 is restricted to a device that includes both a clarified water outlet and the waste outlet. However, Boye does not disclose any structure that meets the claim limitations of the claimed header jacket. For instance, Boye does not disclose any structure that includes two outlets -- a clarified water outlet and a waste outlet -- as required by the claim. Instead, Boye describes that the outlet (shown by the arrow exiting the device in Boye's Fig. 1) is used as both the clarified water outlet and the waste outlet. This is clearly shown in both Boye's Figs. 1 and 2. However, a proper construction of this claim requires that the header jacket include two separate outlets. No reasonable construction of the claim encompasses a single outlet shown by the arrow exiting Boye's device.

Boye discloses plumbing and valves disposed downstream from the alleged header jacket that allow the clarified water and the waste to be directed from the filtering device. This plumbing is external to the alleged header jacket. However, since the claim requires that the header jacket include the clarified water outlet and the waste outlet, Boye's plumbing disposed downstream from the alleged header jacket cannot be deemed analogous to the claimed clarified water outlet and the waste outlet. For this additional reason, claim 41 defines patentable subject matter over the cited art.

**F. Claim 45 is Not Anticipated by Boye because Boye does Not disclose an Array of Air Supply Holes Disposed in a Media Fixing Plate**

Claim 45 is as follows:

The method of claim 41 including directing the air into the treatment cavity via an array of air supply holes disposed in a media fixing plate, the array of air supply holes being adjacent fiber ends that are secured to the media fixing plate.

In rejecting these claims the Examiner never shows where Boye discloses an array of air supply holes disposed in the alleged media fixing plate. To properly reject a claim under § 102 the Examiner must point where the prior art teaches each limitation of a claim. Since the Examiner has failed to set forth a proper § 102 rejection, the rejection fails as a matter of law.

Moreover, as shown in Fig. 2 of Boye, the air is never conducted through air supply holes disposed in the media fixing plate. Further, Boye never mentions any type of air supply holes disposed in the media fixing plate. Instead, Boye only teaches that air is injected into the housing from inlet 66 through line 56. Air enters the filtration device from line 56 into the inlet end 5 of the filtration device. When air passes into inlet end 5, the air travels through inlets 6 and through the fibers. These inlets 6 are not disposed in the alleged media fixing plate, but instead are disposed to the right of the alleged media fixing plate. Thus, air actually bypasses the alleged media fixing plate. For at least this reason, claim 45 defines patentable subject matter over the cited art.

**G. Claim 52 is Not Anticipated by Boye because Boye does Not disclose the claimed Annular Plate**

Claim 52 is as follows:

The method of claim 41 including extending the flexible fibers through a generally central opening formed in an annular plate that is disposed between the water inlet and the air let such that the flexible fibers are constrained by the opening in the annular plate and the density of the flexible fibers in the opening of the annular plate generally inhibits the flow of water from the water inlet to the air inlet.

As stated above, the only structure in Boye that can reasonably be construed to constrain the fibers is Boye's clamp 7a/7b. When the jaws of clamp 7a/7b are contracted, the jaws constrain the fibers.

One of ordinary skill in the art understands that the meaning of the claim terms "annular plate" refers to a plate that is formed in a ring shape. This is clearly shown in Applicant's Fig. 10 above. However, Boye describes that clamp 7a/7b has two jaws. See, Boye, p. 12, lines 4-12. Clearly, clamp 7a/7b is not an annular plate, as required by the claim. The claim term "annular plate" cannot reasonably be construed so broadly as to include clamp 7a/7b. For at least this reason, claim 34 defines patentable subject matter over the cited art.

**H. The Specification Provides Proper Antecedent Basis for the Claim Terms in Claims 29, 31, 37, 43, 46, and 52.**

In the Action, the Examiner objects to the specification for "failing to provide proper antecedent basis" for certain claimed subject matter. Office Action, p. 2. In particular, the Examiner alleges that there is no antecedent basis for the following claim terms:

Claims 29 and 37: "air supply holes disposed in a member within the housing"<sup>3</sup>

Claims 43 and 52: "annular device" around a portion of the fibers and generally compressing the fibers in an area of the treatment cavity.<sup>4</sup>

Claims 31 and 46: "array of openings disposed in a circumferential band" around the outer wall of the housing, the array of openings in the outer wall being aligned with the annular water guide jacket to conduct the water into the cavity and to distribute the water within the cavity.<sup>5</sup>

The MPEP § 2163.02 states that the "subject matter of the claim need not be described literally (i.e., using the same terms or *in haec verba*) in order for the disclosure to satisfy the description requirement. As described below, the meanings of all of the above claim terms are clearly apparent from the descriptive portion of the specification and the figures. Moreover, these terms have clear support in the specification.

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<sup>3</sup> Note that claim 37 has slightly different claim language. Claim 37 requires "air supply holes in a member disposed within the housing."

<sup>4</sup> Note that claim 52 has slightly different claim language. Claim 52 states "an annular plate that is disposed between the water inlet and the air let such that the flexible fibers are constrained by the opening in the annular plate."

<sup>5</sup> Note that claim 46 has slightly different claim language. Claim 46 requires "an array of openings in a circumferential band extending around an outer wall that surrounds the treatment cavity and distributing the water within the cavity."

**1. The claim language in claims 29 and 37 does not lack antecedent basis**

As mentioned above, the Examiner states that the claim language requiring "air supply holes disposed in a member within the housing" lacks antecedent basis in the specification. However, this finding is clearly erroneous. Applicants point to page 5 line 33 through page 6 line 2 of the specification which states "[a] plurality of backwash air supply holes...may be formed in the filter media fixing plate...or may be formed in the upper portion of the backwash air supply pipeline within the main body." In addition, the specification on page 8 lines 13-15 states "a filter media fixing plate 12a....on which backwash air supply holes 14 are formed..." Further, air supply holes 14 are clearly shown in Fig. 6. The mere fact that the claims state that air supply holes are disposed in a "member" rather than a media fixing plate or formed in the air supply pipeline, does not mean the claims lack sufficient antecedent basis. Instead, the claim term "member" is merely a generic term used to describe where the air supply holes are located. Any person of ordinary skill in the art understands the meaning of these claim terms read in light of the specification. Thus, the above cited descriptions read in connection with the figures provide clear support and antecedent basis for the claimed language in claims 29 and 37. Accordingly, the § 112 rejection is legally and factually erroneous..

**2. The claim language in claims 43 and 52 does not lack antecedent basis**

The Examiner states that the claim language requiring an "annular device" or an "annular plate" disposed around a portion of the fibers and which generally compress the fibers, lacks antecedent basis in the specification. Again, this finding is clearly erroneous. Applicants point to page 7 lines line 6 and 27-31 of the specification which states "[a] density control plate 9 having a doughnut shape is interposed between the supplied water guide jacket 7 and the filter media fixing plate 12 and prevents the supplied water from flowing to the filter media fixing plate 12 by increasing the water pressure in a hollow portion of the flexible fibers 6 fixed to the media fixing plate 12." Further, the annular device/plate 9 which compresses or constrains the fibers is

clearly shown in Fig. 10. Moreover, Applicants note that one of ordinary skill in the art understands that the meaning of the claim terms "annular device" or "annular plate" refers to a device/plate that is formed in a ring shape. Thus, the specification's description of a density control plate having a "doughnut shape" - which is clearly also a ring shape - clearly provides support for an "annular device" or an "annular ring." Accordingly, the above cited descriptions read in connection with the figures provide clear support and antecedent basis for the claimed language in claims 43 and 52. Accordingly, the § 112 rejection is legally and factually erroneous.

**3. The claim language in claims 31 and 46 does not lack antecedent basis**

The Examiner states that the claim language requiring an "array of openings disposed in a circumferential band" around the outer wall of the housing and aligned with the annular water guide jacket to conduct the water into the cavity, lacks antecedent basis in the specification. Again, this finding is clearly erroneous. Applicants point to page 8 lines 21-25 of the specification which states, "[a] plurality of supplied water passing holes 8 are formed in the main body 1 where the supplied water guide jacket 7 contacts the main body." Further page 7 lines 24-25 of the specification states that the "supplied water guide jacket 7 supplies the supplied water into the side of the lower portion of the main body..." Further, the "array of openings disposed in a circumferential band" in the outer wall is clearly shown in Figs. 2 and 9. Since Figs. 2 and 9 each show a "side view" of the apparatus, while Figs. 1 and 12 clearly show a substantially circular apparatus, one of ordinary skill in the art understands that the claimed openings are disposed in a circumferential band. See, spec, p. 6 line 33 through p. 7 line 9 and Figs. 1, 2, 9, and 12. Thus, the specification's description read in connection with the figures clearly show an "array of openings disposed in a circumferential band." Accordingly, the above cited descriptions read in connection with the figures provide clear support and antecedent

basis for the claimed language in claims 31 and 46. Accordingly, the § 112 rejection is legally and factually erroneous.

**(VIII.) CLAIMS APPENDIX**

25. A fine filtering apparatus for removing fine particles from water, the device comprising:
- a. an elongated housing forming a main body and having an impervious wall enclosing an interior cavity that extends through the housing;
  - b. a plurality of flexible fibers extending within the cavity for contacting flowing water and removing fine particles from the water without separating a permeate from the water;
  - c. the housing including a pair of opposed end portions wherein disposed adjacent a first end portion is a water inlet for receiving a stream of water, the inlet including an annular water guide jacket extending around the first end portion of the housing and being in fluid communication with the cavity for distributing the water within the cavity;
  - d. a header jacket disposed adjacent an opposite second end portion of the housing;
  - e. the header jacket including a clarified water outlet for discharging a clarified water from the cavity;
  - f. the header jacket also including a waste outlet for discharging a concentrated waste from the cavity;
  - g. an air inlet for directing air into the cavity such that the air may contact the fibers and clean some of the fine particles from the fibers;
  - h. a density control plate having an annular shape and disposed within the housing below the water guide jacket for increasing a density of the fibers below the water guide jacket and for generally inhibiting the water from flowing downwardly in a direction toward the air inlet;



- i. in one mode of operation of the fine filtering apparatus, the water is directed through the cavity and some of the fine particles are removed from the water producing the clarified water that is discharged from the cavity via the clarified water outlet; and
- j. in another mode of operation of the fine filtering apparatus, both the air and the water are directed through the cavity and some of the fine particles are cleaned from the fibers producing the concentrated waste that is discharged from the cavity through the waste outlet.

26. The fine filtering apparatus of claim 25 wherein first ends of the fibers are secured to a media fixing plate disposed near a first end of the housing and wherein second ends of the fibers are disposed near a second end of the housing, the second ends of the fibers being unattached and free to move about in the cavity as water passes through the cavity; and wherein the fibers are non-tubular and non-membranous.

27. The fine filtering apparatus of claim 25 wherein one or more of the fibers is formed from a material selected from a group including polyamide, polyester, and polypropylene.

28. The fine filtering apparatus of claim 26 wherein the density control plate increases the density of fibers in an area of the cavity between the water guide jacket and the media fixing plate and wherein the increased density of the fibers generally inhibits the water from flowing in a direction from the water guide jacket towards the media fixing plate, the density control plate comprising an annular shaped plate is disposed within the housing between the media fixing plate and the annular water guide jacket and having an opening through which the fibers extend, wherein the annular plate constrains the fibers to the opening thereof, thereby

increasing the density of the fibers in the opening of the annular plate and generally inhibiting the water from flowing from the water guide jacket to the media fixing plate.

29. The fine filtering apparatus of claim 25 including one or more air supply holes disposed in a member within the housing for conducting air into the cavity and dispersing air within the cavity and about the fibers.

30. The fine filtering apparatus of claim 29 wherein the one or more air supply holes form an array of air supply holes disposed in a media fixing plate, the array of air supply holes being disposed adjacent ends of the fibers that are secured in the plate and which act to disperse the air about the fibers.

31. The fine filtering apparatus of claim 25 wherein an array of openings is disposed in a circumferential band around the outer wall of the housing, the array of openings in the outer wall being aligned with the annular water guide jacket to conduct the water into the cavity and to distribute the water within the cavity.

32. The fine filtering apparatus of claim 25 including a porous chamber in fluid communication with the clarified water outlet, the chamber disposed in the second end portion of the housing and projecting in among the fibers to receive the clarified water from the cavity.

33. The fine filtering apparatus of claim 32 wherein a volume of the porous chamber is about 10% to about 50% of a volume of the cavity.

34. A fine filtering apparatus for removing fine particles from water directed from a water source, the device comprising:

- a. an elongated housing forming a main body and having an impervious outer wall comprising a substantial portion of the main body;
- b. an interior cavity extending through the housing and being substantially enclosed within the outer wall;
- c. a plurality of flexible fibers extending within the cavity for contacting flowing water and removing fine particles from the water;
- d. first and second end portions of the housing each disposed adjacent opposite first and second ends of the housing;
- e. a water inlet disposed on the first end portion for directing the water into the cavity;
- f. the second end portion of the housing, including a clarified water outlet for discharging clarified water from the cavity and a waste outlet for discharging a concentrated waste from the cavity;
- g. an air inlet disposed adjacent the first end portion for directing air into the cavity for contacting the fibers and for cleaning some of the fine particles from the fibers;
- h. a density control plate for increasing the density of the fibers in an area of the cavity between the water inlet and the air inlet and wherein the increased density of the fibers generally inhibits the water from flowing in a direction from the water inlet towards the air inlet, the density control plate comprising an annular plate disposed within the housing between the water inlet and the air inlet and having an opening through which the fibers extend, wherein the annular plate constrains the fibers to the opening thereof, thereby increasing the density of the fibers in

the opening of the annular plate and generally inhibiting the flow of water from the water inlet, through the opening of the annular plate, to the air inlet;

- i. in one mode of operation of the fine filtering apparatus, the water is directed through the cavity and some of the fine particles are removed from the water, producing the clarified water that is discharged via the clarified water outlet; and
- j. in another mode of operation of the fine filtering apparatus, both the air and the water are directed through the cavity and some of the fine particles are cleaned from the fibers producing the concentrated waste that is discharged via the waste outlet.

35. The fine filtering apparatus of claim 34 wherein first ends of the fibers are secured to a media fixing plate disposed near the first end of the housing and wherein second ends of the fibers are disposed near the second end of the housing, and are unattached and free to move about; and wherein the fibers are non-tubular and non-membranous.

36. The fine filtering apparatus of claim 34 wherein the density control plate is disposed within the housing between a media fixing plate and the water inlet, the density control plate increasing a density of fibers between the media fixing plate and the water inlet.

37. The fine filtering apparatus of claim 34 including on or more air supply holes in a member disposed within the housing for conducting the air into the cavity and dispersing the air about the fibers.

38. The fine filtering apparatus of claim 34 including an array of air supply holes in a media fixing plate disposed within the housing, the plate having ends of the fibers secured thereto, the

array of openings disposed adjacent the ends of the fibers for conducting the air into the cavity and dispersing the air about the fibers.

39. The fine filtering apparatus of claim 34 wherein an array of openings is disposed in a circumferential band around the outer wall of the housing, the array of openings being aligned with the water inlet which includes an annular water guide jacket to conduct the water into the cavity and to distribute the water within the cavity.

40. The fine filtering apparatus of claim 34 including a chamber having an array of openings in an outer wall thereof, the chamber in fluid communication with the clarified water outlet, and the chamber disposed in the second end portion of the housing and projecting in among the fibers for receiving the clarified water.

41. A method of treating water having fine particles therein with a device having a treatment cavity, an air inlet and a water inlet disposed on one portion of the device, and a clarified water outlet and a concentrated waste outlet disposed on another portion of the device, the method including:

- a. closing the concentrated waste outlet and opening the clarified water outlet;
- b. directing the water into the water inlet and through the treatment cavity;
- c. as the water is passed through the treatment cavity, flowing the water adjacent a plurality of flexible fibers extending within the treatment cavity and removing fine particles from the water without separating a permeate from the water;
- d. discharging the clarified water out the clarified water outlet;
- e. closing the clarified water outlet and opening the concentrated waste outlet;
- f. injecting air into the treatment cavity and mixing the air with the water having the fine particles to form an air-water mixture;
- g. passing the air-water mixture through the treatment cavity and contacting the fibers and dislodging the fine particles captured on the fibers, producing a concentrated waste including the air-water mixture and the dislodged fine particles; and
- h. discharging the concentrated waste through the concentrated waste outlet.

42. The method of claim 41 wherein respective fibers include opposed ends, and wherein one end of each fiber is fixed while the other end is unattached and free to move about as the water or air-water mixture passes through the treatment cavity; and wherein the fibers are non-tubular and non-membranous.

43. The method of claim 41 including extending an annular device around a portion of the fibers and generally compressing the fibers in an area of the treatment cavity.

44. The method of claim 41 directing the air into the cavity through one or more air supply holes disposed adjacent the fibers.

45. The method of claim 41 including directing the air into the treatment cavity via an array of air supply holes disposed in a media fixing plate, the array of air supply holes being adjacent fiber ends that are secured to the media fixing plate.

46. The method of claim 41 wherein directing the water into the treatment cavity includes directing the water through an array of openings in a circumferential band extending around an outer wall that surrounds the treatment cavity and distributing the water within the cavity.

47. The method of claim 41 including directing the clarified water into a porous chamber in fluid communication with the clarified water outlet, the chamber disposed in the treatment cavity and projecting in among the fibers when the water or air -water mixture is passing through the treatment cavity.

48. The method of claim 41 including generating turbulence in the treatment cavity by contacting the water with the fibers.

49. The method of claim 41 wherein the treatment cavity is formed by an elongated housing and wherein the air inlet and water inlet are disposed adjacent one end portion of the housing and the clarified water outlet and concentrated waste outlet are disposed adjacent an opposite

end portion of the housing, and wherein the housing is cylindrical and the fibers extend generally longitudinally through the cavity as the water passes in contact with the fibers.

50. The method of claim 41 wherein the clarified water is discharged out the clarified water outlet while the concentrated waste outlet is closed and wherein the concentrated waste is discharged through the concentrated waste outlet while the clarified water outlet is closed.

51. The method of claim 41 wherein the flexible fibers extend through the cavity in an area between the water inlet and the air inlet; and wherein the method includes generally inhibiting the flow of water from the water inlet towards the air inlet by increasing the density of the flexible fibers in an area generally between the water inlet and the air inlet.

52. The method of claim 41 including extending the flexible fibers through a generally central opening formed in an annular plate that is disposed between the water inlet and the air let such that the flexible fibers are constrained by the opening in the annular plate and the density of the flexible fibers in the opening of the annular plate generally inhibits the flow of water from the water inlet to the air inlet.

53. The fine filtering apparatus of claim 35 wherein the flexible fibers remove fine particles from the water without separating a permeate from the water.



**(IX.) EVIDENCE APPENDIX**

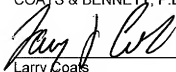
None.

**(X.) RELATED PROCEEDINGS APPENDIX**

None.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.

A handwritten signature in black ink, appearing to read "Larry Coats", is written over a horizontal line.

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